

Estimate of Water Savings, Energy Savings, and GHG Emissions Reduction

Project Name: **Kagel Canyon Road Watermain Replacement**
 Total Project Cost: **\$1,399,264**

Project Assumptions		
Step 1: Enter the baseline (pre-project) volume of water associated with the project	0.015	MG/year
Step 2: Enter the volume of water that will be delivered after the project is implemented.	0	MG/year
Step 3: Enter the volume of hot water saved from the project's electric water heating system (the summation of step 3 and step 4 must not exceed annual volume of water savings). If not applicable, enter "0".	0	MG/year
Step 4: Enter the volume of hot water saved from the project's natural gas water heating system (the summation of step 3 and step 4 must not exceed annual volume of water savings). If not applicable, enter "0".	0	MG/year
Step 5: Enter the useful life in years for the project	50	years
Step 6: Enter the percentage of water that is imported	100%	
Step 7: Enter the Energy Intensity (EI) of the System associated with the project's water savings	13333.33	kWh/MG
Step 8: Enter the total output emission rate specific to the power supplier or use the default value of 0.278	0.7995	kg CO ₂ e/kWh
Step 9: Enter EI associated with the Supply and Conveyance segment of the imported water or enter "0" if imported water is not applicable	0	kWh/MG
Step 10: Enter any additional annual energy savings from energy efficiency and renewable energy (EE/RE), etc.	0	kWh/year
Note: on a separate sheet provide the basis for the estimates and information sources for factors entered		
Note: values below are determined from the above Project Assumptions		Units
Water Savings		
1) Annual volume of water savings within System	0.015	MG/year
2) Annual volume of imported water savings	0.015	MG/year
3) Annual volume of hot water heating system savings	0	MG/year
4) Lifetime volume of water savings within System	0.75	MG
5) Lifetime volume of imported water savings	0.75	MG
6) Lifetime volume of hot water heating system savings	0	MG
Energy Savings		
1) Annual energy savings within System	200	kWh/year
2) Annual energy savings from imported water	0	kWh/year
3) Annual energy savings from electric hot water heating system	0	kWh/year
4) Annual energy savings from natural gas hot water heating system (used to calculate total energy saving)	0	kWh/year
5) Total annual energy savings from electric and natural gas hot water heating systems	0	kWh/year
6) Annual energy savings from natural gas hot water heating system (used to calculate GHG emission)	0	therms/year
7) Lifetime energy savings within System	10,000	kWh
8) Lifetime energy savings from imported water	0	kWh
9) Lifetime energy savings from electric hot water heating system	0	kWh
10) Lifetime energy savings from natural gas hot water heating system	0	kWh
11) Total lifetime energy savings from electric and natural gas hot water heating systems	0	kWh
12) Lifetime energy savings from natural gas water heating system	0	therms
13) Additional lifetime energy savings from Energy Efficiency and Renewable Energy (EE/RE), etc.	0	kWh
GHG Emission Reductions		
1) Annual GHG emission reductions within System	160	kg CO ₂ e/year
2) Annual imported GHG emission reductions	0	kg CO ₂ e/year
3) Annual GHG emission reductions from electric hot water heating	0	kg CO ₂ e/year
4) Annual GHG emission reductions from natural gas hot water heating system	0	kg CO ₂ e/year
5) Total annual GHG reductions from electric and natural gas hot water heating system	0	kg CO ₂ e/year
6) Lifetime GHG emission reductions within System	7,995	kg CO ₂ e
7) Lifetime GHG emission reductions from imported water	0	kg CO ₂ e
8) Lifetime GHG emission reductions from electric heating system	0	kg CO ₂ e
9) Lifetime GHG emission reductions from natural gas water heating system	0	kg CO ₂ e
10) Total lifetime GHG emission reductions from electric and natural gas hot water heating systems	0	kg CO ₂ e
11) Additional annual GHG emission reductions from Energy Efficiency and Renewable Energy (EE/RE), etc.	0	kg CO ₂ e/year
12) Additional lifetime GHG emission reductions from Energy Efficiency and Renewable Energy (EE/RE), etc.	0	kg CO ₂ e
Project Summary		
Total annual water savings	0.015	MG/year
Total lifetime water savings	0.75	MG
Total annual energy savings	200	kWh/year
Total lifetime energy savings	10,000	kWh
Total annual GHG emission reductions	160	kg CO ₂ e/year
Total lifetime GHG emission reductions	7,995	kg CO ₂ e